

## WHAT IS CLAIMED IS:

1. An exposure device for exposing a predetermined imaging region at a recording medium with a light beam, which has been modulated in accordance with image data, for forming an image corresponding to the image data at the imaging region, the exposure device comprising:

an exposure stage on which the recording medium is placed;

a reading section which, at a reading position facing the recording medium on the exposure stage, reads alignment marks from the recording medium, the alignment marks having been provided to correspond to the imaging region;

an information processing section which determines a position of the imaging region at the recording medium on the basis of read information from the reading section, and performs position conversion processing on the image data in accordance with the position of the imaging region; and

an exposure section disposed at an upstream side, along a scanning direction, of the reading section, which exposure section exposes, at an exposure position facing the recording medium on the exposure stage, the imaging region of the recording medium with the light beam, which has been modulated on the basis of image data from the information processing section, for forming the image at the imaging region,

wherein the reading section and the exposure section are structured to be relatively movable in the scanning direction with respect to the recording medium on the exposure stage, by at least one of

relatively moving the exposure stage with respect to the reading section and the exposure section and

relatively moving the reading section and the exposure section with respect to the exposure stage,  
and

before commencement of exposure of the imaging region by the exposure section, the reading section reads the alignment marks that correspond to at least one of

a leading end and trailing end of the imaging region that is to be exposed by the exposure section and

a leading end and trailing end of a sub-region into which the imaging region is divided in the scanning direction,  
and the information processing section performs the position conversion processing on the image data on the basis of read information of these alignment marks.

2. The exposure device of claim 1, wherein the exposure stage is relatively movable with respect to the reading section and the exposure section, such that the reading section and the exposure section are relatively movable in the scanning direction with respect to the recording medium.

3. The exposure device of claim 2, wherein a distance along the scanning direction from the reading section to the exposure section is set to a length greater than or equal to a pitch of the alignment marks that are provided to respectively correspond to the at least one of: the leading end and trailing end of the imaging region that is to be exposed by the exposure section; and the leading end and trailing end of the sub-region into which the imaging region is

divided in the scanning direction.

4. The exposure device of claim 3, further comprising a stage driving section which, during reading of the alignment marks by the reading section and during exposure of the imaging region by the exposure section, moves the exposure stage at a speed for exposure at which exposure is carried out by the exposure section, in a direction opposite to the scanning direction, for moving the recording medium placed on the exposure stage in the scanning direction at the speed for exposure.

5. The exposure device of claim 3, further comprising an exposure position adjustment section which alters the distance along the scanning direction from the reading section to the exposure section in accordance with the pitch of the alignment marks that correspond to the imaging region, positions of the alignment marks being determined by the information processing section.

6. The exposure device of claim 1, wherein the information processing section determines the position of the imaging region for each sub-region, and performs the position conversion processing on the imaging region in accordance with each sub-region.

7. The exposure device of claim 1, wherein the reading section and exposure section are structured to be relatively movable in the scanning direction with respect to the recording medium on the exposure stage.

8. The exposure device of claim 7, further comprising an exposure section-driving section which, when exposure of the imaging region, whose position has been determined by the information processing section, is being performed, moves the exposure section in the scanning direction at a speed for image formation of the imaging region.

9. The exposure device of claim 8, further comprising a reading section-driving section which moves the reading section along the scanning direction such that the reading section passes reading positions of the alignment marks, that correspond to the at least one of the leading end and trailing end of the imaging region that is to be exposed by the exposure section and the leading end and trailing end of the sub-region into which the imaging region is divided in the scanning direction, before commencement of exposure of the imaging region by the exposure section.

10. An exposure device for exposing a predetermined imaging region at a recording medium with a light beam, which has been modulated on the basis of image data, while relatively moving the recording medium in a predetermined scanning direction, for forming an image corresponding to the image data at the imaging region, the exposure device comprising:

a reading section which reads alignment marks from the recording medium, at a reading position facing the recording medium which is moving relatively in the scanning direction, the alignment marks having been provided to correspond to the imaging region;

an information processing section which determines a position of the

imaging region at the recording medium on the basis of information read by the reading section, and performs position conversion processing on the image data in accordance with the position of the imaging region; and

an exposure section disposed at an upstream side, along the scanning direction, of the reading section, which exposure section exposes, at an exposure position facing the recording medium which is moving relatively in the scanning direction, the imaging region of the recording medium with the light beam, which has been modulated on the basis of image data from the information processing section, for forming the image at the imaging region,

wherein a distance along the scanning direction from the reading section to the exposure section is set to a length greater than or equal to a pitch of the alignment marks that are provided to respectively correspond to at least one of a leading end and trailing end of the imaging region that is to be exposed by the exposure section and a leading end and trailing end of a sub-region, into which the imaging region is divided in the scanning direction.

11. The exposure device of claim 10, further comprising:

an exposure stage on which the recording medium is placed; and

a stage driving section which, during reading of the alignment marks by the reading section and during exposure of the imaging region by the exposure section, moves the exposure stage at a speed for exposure at which exposure is carried out by the exposure section, in a direction opposite to the scanning direction, for moving the recording medium placed on the exposure stage in the scanning direction at the speed for exposure.

12. The exposure device of claim 11, further comprising an exposure position adjustment section which alters the distance along the scanning direction from the reading section to the exposure section in accordance with the pitch of the alignment marks that correspond to the imaging region, positions of the alignment marks being determined by the information processing section.

13. The exposure device of claim 11, wherein the information processing section determines the position of the imaging region for each sub-region, and performs the position conversion processing on the imaging region in accordance with each sub-region.

14. The exposure device of claim 13, wherein the reading of the alignment marks by the reading section, the position conversion processing by the information processing section on the basis of the information read by the reading section, and the image formation by the exposure section on the basis of the image data that has been subjected to the position conversion processing are performed separately for each sub-region.

15. An exposure device for exposing a predetermined imaging region at a recording medium with a light beam, which has been modulated in accordance with image data, for forming an image corresponding to the image data at the imaging region, the exposure device comprising:

an exposure stage on which the recording medium is placed;

a reading section which, while moving in a predetermined scanning direction, reads alignment marks from the recording medium, at a reading

position facing the recording medium on the exposure stage, the alignment marks having been provided to correspond to the imaging region;

an information processing section which determines a position of the imaging region at the recording medium on the basis of information read by the reading section, and performs position conversion processing on the image data in accordance with the position of the imaging region;

an exposure section disposed at an upstream side, along the scanning direction, of the reading section, which exposure section, while moving in the scanning direction, exposes, at an exposure position facing the recording medium on the exposure stage, the imaging region of the recording medium with the light beam, which has been modulated on the basis of image data from the information processing section, for forming the image at the imaging region;

an exposure section-driving section which, during exposure of the imaging region, whose position has been determined by the information processing section, moves the exposure section in the scanning direction at a speed for image formation of the imaging region; and

a reading section-driving section which moves the reading section along the scanning direction such that the reading section passes reading positions of the alignment marks that correspond to at least one of

a leading end and trailing end of the imaging region that is to be exposed by the exposure section and

a leading end and trailing end of a sub-region, into which the imaging region is divided in the scanning direction, before commencement of exposure of the imaging region by the exposure

section.

16. The exposure device of claim 15, wherein the information processing section determines the position of the imaging region for each sub-region, and performs the position conversion processing on the imaging region in accordance with each sub-region.

17. The exposure device of claim 16, wherein the reading of the alignment marks by the reading section, the position conversion processing by the information processing section on the basis of the information read by the reading section, and the image formation by the exposure section on the basis of the image data that has been subjected to the position conversion processing are performed separately for each sub-region.

18. The exposure device of claim 15, wherein a speed of movement of the reading section is faster than a speed of exposure at which exposure is carried out by the exposure section.